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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,716	01/18/2002	Gregg D. Sucha	A8287	6834
7590 09/29/2005				
SUGHRUE MION, PLLC 2100 Pennsylvania Avenue, NW Washington, DC 20037-3213		EXAMINER NGUYEN, DUNG T		
		ART UNIT 2828		

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/050,716	<b>Applicant(s)</b> SUCHA ET AL.	
	<b>Examiner</b> Dung (Michael) T. Nguyen	<b>Art Unit</b> 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 30-34, 36-55 and 57-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37-40 is/are allowed.
- 6) ☒ Claim(s) 30, 31, 33, 41-46, 48, 53-55 and 57-61 is/are rejected.
- 7) ☒ Claim(s) 32, 34, 36, 47 and 49-52 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 30-34, 36-55, and 57-61 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

Claim 30 is objected to because of the following informalities: it is not clear how to operate the enclosure to stabilize a rep. rate of the fiber laser. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30-31, 54, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro et al. (5125066) in view of Wechsler (4995105). Ishiguro disclose a fiber laser (col.3, 1.50-52) in an enclosure 10 in Fig.3.

Ishiguro lack the temperature controlled enclosure.

Wechsler teach the temperature controlled enclosure (col.1, 1.21-24) (it is understood that when the temperature is controlled in the enclosure, the rep. rate of the laser will be stabilized).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Ishiguro what is taught by Wechsler in order not to degrade the laser performance in terms of wavelength and power.

With respect to claim 31, Ishiguro disclose in Fig.4A the fiber laser 11 being wrapped onto the spool 41 (bobbin).

Claims 33, 53, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro et al. (5125066) in view of Wechsler (4995105) and further in view of Wayne et al. (4229079). Ishiguro and Wechsler disclose all limitations of the claims except for the fiber spool being acoustically damped.

Wayne teach the enclosure being acoustically damped (col.7, l.3-11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Ishiguro and Wechsler what is taught by Wayne to have a fiber spool to be acoustically damped inside the acoustically damped enclosure to suppress the acousto-optic effects within the enclosure (abstract).

Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro (5125066) in view of Wechsler (4995105) and further in view of Hsu et al. (5425039). Ishiguro and Wechsler disclose all limitations of the claims except for the PZT.

Hsu teach the PZT (col.4, l.15-20).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Ishiguro and Wechsler what is taught by Hsu to adjust the laser cavity length as well the repetition rate.

Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro et al. (5125066) in view of Wechsler (4995105) further in view of Hsu (5425039) and even further in view of the admitted prior art. Ishiguro, Wechsler, and Hsu disclose all limitations of the claims except for the phase locked loop circuit.

Admitted prior art teaches the phase locked loop circuit (para.0027).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Ishiguro, Wechsler, and Hsu what is taught by Admitted prior art to stabilize the laser to an external frequency reference (para.0027).

Claims 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (5425039) in view of Wechsler (4995105).

With respect to claim 41, Hsu disclose the fiber laser and the length of the fiber laser cavity being adjusted in response to a temperature change (col.4, 1.8-19).

Hsu lack the temperature controlled enclosure.

Wechsler teach the temperature controlled enclosure (col.1, 1.24-25).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Hsu what is taught by Wechsler in order not to degrade the laser performance in terms of wavelength and power (col.4, 1.9-10).

With respect to claim 42, Hsu disclose the PZT alters the rep rate (col.4, l.17-22).

Claims 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (5425039) in view of Wechsler (4995105) and further in view of Rahn et al. (48842283). Hsu et al. (5425039) and Wechsler (4995105) disclose all limitations of the claims except for conditioning the PZT drive signal and driving the PZT with a sinusoidal signal.

Rahn teach conditioning the PZT drive signal (43, 49) and driving the PZT with a sinusoidal signal 41 in Fig.3.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Hsu and Wechsler what is taught by Rahn in order to control the PZT to perform properly for adjusting the laser cavity.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro et al. (5125066) in view of Wechsler (4995105). Ishiguro disclose a fiber laser (col.3, l.50-52) wrapped around a bobbin 41 (spool) in an enclosure 10 in Fig.3.

Ishiguro lack the temperature controlled enclosure.

Wechsler teach the temperature controlled enclosure (col.1, l.21-24) (it is understood that when the temperature is controlled in the enclosure, the rep. rate of the laser will be stabilized).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Ishiguro what is taught by Wechsler in order not to degrade the laser performance in terms of wavelength and power.

Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro et al. (5125066) in view of Wechsler (4995105) and further in view of Johnson what is taught by Ishiguro and Wechsler disclose all limitations of the claims except for the enclosure being acoustically damped.

Wayne teach the enclosure being acoustically damped (col.7, l.3-11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Ishiguro and Wechsler what is taught by Lawyer to suppress the acousto-optic effects within the enclosure (abstract).

Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro et al. (5125066) in view of Wechsler (4995105) and further in view of Hsu et al. (5425039). Ishiguro and Wechsler disclose all limitations of the claims except for the PZT.

Hsu teach the PZT (col.4, l.15-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Ishiguro and Wechsler what is taught by Hsu to adjust the laser cavity length as well the repetition rate.

Claims 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro et al. (5125066) in view of Wechsler (4995105). Ishiguro disclose a fiber laser (col.3, l.50-52) wrapped around a bobbin 41 (spool) in an enclosure 10 in Fig.3.

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Ishiguro lack the temperature controlled enclosure and the laser held near/above ambient temperature.

Wechsler teach the temperature controlled enclosure and the laser held near/above ambient temperature (col.1, 1.21-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Ishiguro what is taught by Wechsler in order not to degrade the laser performance in terms of wavelength and power.

*Allowable Subject Matter*

Claims 32, 34, 36, 47, and 49-52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 37-40 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 37-40 is allowed over the Ishiguro, Wechsler, Hsu, Rahn, and Lawyer prior art because they fail to teach, taken singly or combined, the limitation of co-wrapping the two fiber lasers on a single spool.



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### Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Michael Dung Nguyen



JAMES  
MENEFF